REMARKS

Pending Claims

No amendments to the claims have been made. Claims 1-19 were previously subject to an election of species requirement on January 19, 2007 and are currently withdrawn from examination. Claims 20-28 are currently pending.

35 U.S.C. § 103 – Claims 20, 21, 23, and 26-28

The Examiner has rejected Claims 20, 21, 23, and 26-28 under 35 U.S.C. § 103(a) as being unpatentable over Figure 1, which the Examiner characterizes as "Applicant Admitted" prior art in view of U.S. Patent Application Publication No. 2004/0263028 to Pei et al. ("Pei"). Applicants respectfully disagree. First, Pei does not disclose "a hydrophobic layer on a cavity-side surface of the first electrode" as recited in Claim 20. Second, the disclosure of Pei is irrelevant to the device described in Figure 1, and therefore, Pei is not combinable with Figure 1.

Claim 20

(1) Pei does not disclose the recited limitation

In the Office Action, the Examiner states that "Pei teaches a hydrophobic (291 and 292) are [sic] being [sic] used on a cavity-side surface of the first electrode (Para [172 and 173] and electrode 295) in this instant [sic] the hydrophobic layer will be use [sic] on electrodes 295 [sic]." Office Action, p. 2. However, Pei does not disclose "a hydrophobic layer on a cavity-side surface of the first electrode."

Figure 2M of Pei shows three electrode layers, 293, 294, and 295. The pre strained polymer layers 291 and 292 completely fill all of the space between each of the electrode layers, and thus, no cavity between the electrode layers exists. As no cavity exists, Pei cannot disclose a hydrophobic layer on a "cavity-side surface" of an electrode. Therefore, Applicants respectfully request withdrawal of the rejection.

(2) Pei is irrelevant and not combinable with Figure 1

The Examiner's reasoning for combining Pei with Figure 1 is as follows: "A motivation for such an application is to prevent water from interacting with the electrode and (arm 291 and 292) in order to produce fix [sic] mechanic movement in the interferometer arms." However, Pei

is completely silent with regards to preventing water from interacting with electrodes. Pei discloses that "[f]or hydrophobic electroactive polymers that may not adhere well to a water based electrode, the surface of the polymer may be pretreated by plasma etching or with a fine powder such as graphite or carbon black to increase adherence." Pei, Paragraph [0172].

However, Figure 1 does not depict the presence of water, a "hydrophobic electroactive polymer," nor a "water based electrode." Therefore, the cited disclosure of Pei at paragraph [0172] is irrelevant to Figure 1.

In addition, the Examiner's reasoning with respect to providing fixed mechanic movement to the interferometer arms, if applied to the device of Figure 1, would completely inhibit its function and render it useless. In Figure 1, top electrode 102 is moveable between a "closed" and "open" state relative to bottom electrode 104. *See* Applicants' Specification, p. 2, line 16 – p. 3, line 18. Fixing mechanical movement would render the device inoperable. Thus, one of ordinary skill in the art would not be motivated to fix the mechanical movement, as alleged by the Examiner.

The Examiner argues that "Pei use[s] a similar application in his optical device." Office Action, p. 4. Applicants respectfully disagree. Pei relates to transducer fabrication, not an "optical device." *See* Pei, abstract. Specifically, Figure 2M of Pei illustrates a "bending beam device." Pei, paragraph [0143]. Thus, the Examiner's basis for concluding that Pei and Figure 1 involve "a similar application" appears to be incorrect. Therefore, Applicants respectfully request withdrawal of the rejection.

Claim 21

The Examiner cites paragraph [0195] of Pei, contending that it discloses a hydrophobic layer comprising a hydrophobic organic compound having at least a hydrogen atom being capable of forming hydrogen bonds with oxygen or nitrogen. The Examiner then asserts the "motivation" statement recited in regards to Claim 20, but does not state how that "motivation" is relevant to Claim 21.

Applicants disagree that Claim 21 is obvious over Figure 1 and Pei and note that the Examiner fails to point to the disclosure of "a hydrophobic organic compound having at least a hydrogen atom being capable of forming hydrogen bonds with oxygen or nitrogen" in paragraph

[0195]. In the event that the Examiner maintains this rejection, Applicants respectfully request that the Examiner specifically identify the portion of Pei that discloses a hydrophobic organic compound having at least a hydrogen atom being capable of forming hydrogen bonds with oxygen or nitrogen.

Claim 23

The Examiner cites paragraph [0064] of Pei, contending that it discloses a first electrode comprising an insulating layer. The Examiner also asserts the "motivation" statement recited in regards to Claim 20, but fails to state how it is relevant to Claim 23. Applicants disagree with the Examiner. Pei refers to the electroactive polymer and the electrodes as different structures, stating that "an electroactive polymer refers to a polymer that acts as an insulating dielectric between two electrodes." Pei at paragraph [0064]; *see* also Pei at paragraph [0067]. The Examiner appears to recognize this distinction, referring to electroactive polymers 291 and 292 as corresponding to the supports, not the electrodes, of Claim 20. Thus, even if polymers 291 and 292 comprise an insulating layer (which Applicants do not admit), Pei fails to disclose a first electrode comprising an insulating layer.

Claim 26

The Examiner cites paragraph [0187] of Pei, contending that it discloses a first electrode comprising a transparent conductive layer, a light-absorption layer and an insulating layer. Applicants disagree. Pei paragraph [0187] merely indicates that a reflective surface may be bonded to a bending beam actuator. Pei does not disclose a first electrode comprising a transparent conductive layer, a light-absorption layer and an insulating layer as recited in Claim 26. In the event that the Examiner maintains this rejection, Applicants respectfully request that the Examiner specifically identify the portion of Pei that discloses a first electrode comprising a transparent conductive layer, a light-absorption layer and an insulating layer as recited in Claim 26.

Claim 27

The Examiner cites paragraph [0187] of Pei, contending that it discloses a movable second electrode that is a light-reflection electrode. Applicants disagree. As noted above, Pei paragraph [0187] merely indicates that a reflective surface may be bonded to a bending beam actuator. Pei does not disclose a movable light-reflection electrode as recited in Claim 27. In the event that the Examiner maintains this rejection, Applicants respectfully request that the Examiner specifically identify the portion of Pei that discloses a movable light-reflection electrode.

Claim 28

The Examiner cites paragraph [0195] of Pei, contending that it discloses a hydrophobic layer preventing the first electrode from adsorbing water molecules. The Applicant disagrees. Pei paragraph [0195] relates to the pre-strained polymers, not to a hydrophobic layer on a cavity-side surface of the first electrode. Furthermore, Pei paragraph [0195] does not expressly or inherently refer to a layer that would prevent an electrode from adsorbing water molecules. Pei paragraph [0195] refers to a non-sticking plastic substrate, but this substrate is merely involved in the manufacturing process of the polymers, and is not present in the resulting device. Thus, Applicants respectfully request withdrawal of the rejection.

35 U.S.C. § 103 – Claims 22, 24 and 25

The Examiner has rejected Claims 22, 24, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Figure 1 in view of Pei and U.S. Patent No. 6,335,224 to Peterson et al. ("Peterson"). Applicants respectfully disagree. As discussed above, Pei does not disclose the combination of limitations recited in independent Claim 20, from which Claims 22, 24 and 25 depend. The combination of Figure 1 with Pei and Peterson asserted by the Examiner does not cure these deficiencies. Neither Pei nor Peterson teaches nor suggests an interferometric modulation pixel comprising two supports between the first electrode and the second electrode to form a cavity between the first and the second electrodes and a hydrophobic layer on a cavity-side surface of a first electrode. Therefore, the Applicant respectfully requests reconsideration and withdrawal of these rejections

Applicants respectfully submit that this application is in condition for allowance, early notification of which would be appreciated. If the Examiner has any questions which may be answered by telephone, he is invited to call the undersigned directly at the telephone number provided below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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